

ABSTRACT

The present invention provides a freeze-dried interferon- γ composition for transpulmonary administration which can maintain IFN- γ stably, and can be prepared into fine particles in a vessel at the time of use. A freeze-dried interferon- γ composition for transpulmonary administration of the present invention has the following properties (i) to (iv):

- (i) containing at least one hydrophobic stabilizer selected from the group consisting of hydrophobic amino acids, dipeptides of hydrophobic amino acids, tripeptides of hydrophobic amino acids and derivatives of hydrophobic amino acids and salts thereof; at least one hydrophilic stabilizer selected from the group consisting of hydrophilic amino acids, dipeptides of hydrophilic amino acids, tripeptides of hydrophilic amino acids, derivatives of hydrophilic amino acids and salts thereof; and interferon- γ
- (ii) a non-powder cake-like form;
- (iii) a disintegration index of 0.015 or more; and
- (iv) becoming fine particles having a mean particle diameter of 10 microns or less or a fine particle fraction of 10% or more upon receipt of an air impact having an air speed of at least 1 m/sec and an air flow rate of at least 17 ml/sec.